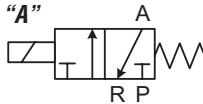




# Pneumatic Directional Control Solenoid Valves – AVP Series



Diagram "A"



2-Pos, Spring Return

NITRA™ pneumatic AVP series directional control solenoid valves are 3-way stackable poppet style valves with 1/8" NPT ports. They provide 2-position, normally closed, spring return operation with either 24 VDC or 120 VAC solenoid coils. The AVP series can be used in individual valve applications or multiple valves can be field assembled (stacked) to share supply air, simplifying piping connections. The DIN style wiring connector includes LED indication of the solenoid coil status.

## Features

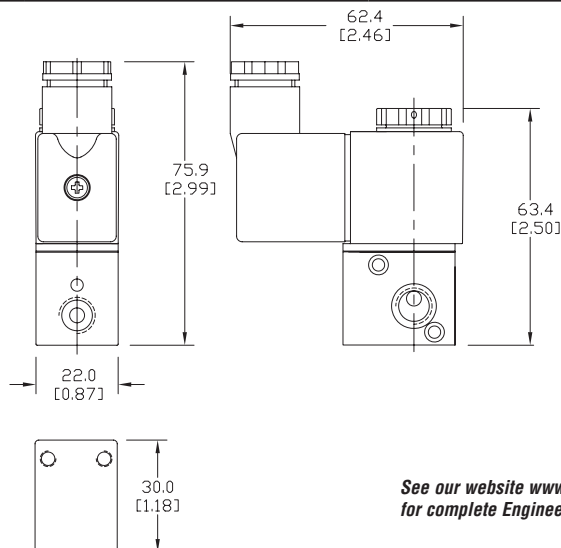
- 3-way stackable poppet style valves
- 1/8" NPT ports
- 2-position, normally closed, spring return
- 24VDC or 120VAC solenoid coils
- DIN style wiring connector with LED indication
- Single valve or multiple stacked valve applications
- 2 year warranty



AVP Series Specifications		
Model	AVP-31C1-24D	AVP-31C1-120A
Price	\$18.50	\$18.50
Weight (lbs)	0.3	
Valve Type	3-way 2 position	
Acting	Direct acting, normally closed, spring return	
Diagram	A	A
Port Size	1/8"	
Orifice Size	1.2 mm, Cv=0.051	
Fluid	Air (to be filtered by 40µ filter element)	
Operating Pressure	20-130Psi, (0.15-0.9MPa), (1.5-9.0 bar)	
Voltage	20.4 - 26.4 VDC	102 - 132 VAC (50/60 Hz)
Power Consumption	DC: 3.0W   AC: 3.5 VA; continuous duty (100% ED)	
Maximum Frequency	10 cycles/sec	
Insulation	B class	
Min Response	0.05 sec	
Temperature	-5-60°C (23-140°F)	
Lubrication	Not Required	
Protection	IP65 (DIN40050)	
Connection	11 mm DIN Terminal with Grommet	
Material of Body	Aluminum Alloy	
Agency Approvals	Solenoid CE marked; RoHS	

## Dimensions

### AVP-31C1



Stacked example using AVP-31KIT stacking screw kit and shown with mounting bracket AVP-31BKT



### AVP-31KIT

Note: One kit is required for each additional AVP-31 valve added to the stack.



### AVP-31BKT

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

Dimensions in mm [inches]

1 - 8 0 0 - 6 3 3 - 0 4 0 5



# Pneumatic Directional Control Solenoid Valve Manifolds and Accessories



**AM Series Manifolds**



**AM-52BP**



**AVP-31BKT**



**AVP-31KIT**

## Pneumatic Directional Control Solenoid Valve Series Accessories

Part No.	Price	Description	Weight (lb)
<b>AM-512</b>	\$7.25	NITRA pneumatic valve manifold, 5-port (4-way), 2-station, aluminum, for use with AVS-51 series directional control valves. Valve mounting screws and gaskets included.	0.4
<b>AM-514</b>	\$12.75	NITRA pneumatic valve manifold, 5-port (4-way), 4-station, aluminum, for use with AVS-51 series directional control valves. Valve mounting screws and gaskets included.	0.6
<b>AM-516</b>	\$18.25	NITRA pneumatic valve manifold, 5-port (4-way), 6-station, aluminum, for use with AVS-51 series directional control valves. Valve mounting screws and gaskets included.	0.8
<b>AM-518</b>	\$25.50	NITRA pneumatic valve manifold, 5-port (4-way), 8-station, aluminum, for use with AVS-51 series directional control valves. Valve mounting screws and gaskets included.	1.1
<b>AM-51BP</b>	\$4.00	NITRA pneumatic blanking plate, plated steel, for use with AM-51 series manifolds. Mounting screws included.	0.1
<b>AM-522</b>	\$10.00	NITRA pneumatic valve manifold, 5-port (4-way), 2-station, aluminum, for use with AVS-52 series directional control valves. Valve mounting screws and gaskets included.	0.5
<b>AM-524</b>	\$20.00	NITRA pneumatic valve manifold, 5-port (4-way), 4-station, aluminum, for use with AVS-52 series directional control valves. Valve mounting screws and gaskets included.	0.9
<b>AM-526</b>	\$30.50	NITRA pneumatic valve manifold, 5-port (4-way), 6-station, aluminum, for use with AVS-52 series directional control valves. Valve mounting screws and gaskets included.	1.2
<b>AM-528</b>	\$40.50	NITRA pneumatic valve manifold, 5-port (4-way), 8-station, aluminum, for use with AVS-52 series directional control valves. Valve mounting screws and gaskets included.	1.5
<b>AM-52BP</b>	\$4.25	NITRA pneumatic blanking plate, plated steel, for use with AM-54 series manifolds. Mounting screws included.	0.1
<b>AM-532</b>	\$15.50	NITRA pneumatic valve manifold, 5-port (4-way), 2-station, aluminum, for use with AVS-53 series directional control valves. Valve mounting screws and gaskets included.	0.8
<b>AM-534</b>	\$30.00	NITRA pneumatic valve manifold, 5-port (4-way), 4-station, aluminum, for use with AVS-53 series directional control valves. Valve mounting screws and gaskets included.	1.4
<b>AM-536</b>	\$46.00	NITRA pneumatic valve manifold, 5-port (4-way), 6-station, aluminum, for use with AVS-53 series directional control valves. Valve mounting screws and gaskets included.	1.9
<b>AM-538</b>	\$60.00	NITRA pneumatic valve manifold, 5-port (4-way), 8-station, aluminum, for use with AVS-53 series directional control valves. Valve mounting screws and gaskets included.	2.5
<b>AM-53BP</b>	\$4.25	NITRA pneumatic blanking plate, plated steel, for use with AM-53 series manifolds. Mounting screws provided.	0.1
<b>AM-542</b>	\$16.50	NITRA pneumatic valve manifold, 5-port (4-way), 2-station, aluminum, for use with AVS-54 series directional control valves. Valve mounting screws and gaskets included.	1.7
<b>AM-544</b>	\$33.50	NITRA pneumatic valve manifold, 5-port (4-way), 4-station, aluminum, for use with AVS-54 series directional control valves. Valve mounting screws and gaskets included.	2.8
<b>AM-546</b>	\$52.00	NITRA pneumatic valve manifold, 5-port (4-way), 6-station, aluminum, for use with AVS-54 series directional control valves. Valve mounting screws and gaskets included.	4.0
<b>AM-548</b>	\$62.00	NITRA pneumatic valve manifold, 5-port (4-way), 8-station, aluminum, for use with AVS-54 series directional control valves. Valve mounting screws and gaskets included.	5.2
<b>AM-54BP</b>	\$4.00	NITRA pneumatic blanking plate, plated steel, for use with AM-54 series manifolds. Mounting screws included.	0.1
<b>AVP-31BKT</b>	\$1.00	NITRA pneumatic individual mounting bracket for use with AVP-31 series directional control valves.	0.1
<b>AVP-31KIT</b>	\$1.75	NITRA pneumatic stacking screw kit for use with AVP-31 directional control valves. One kit is required for each additional AVP-31 valve added to the stack.	0.1

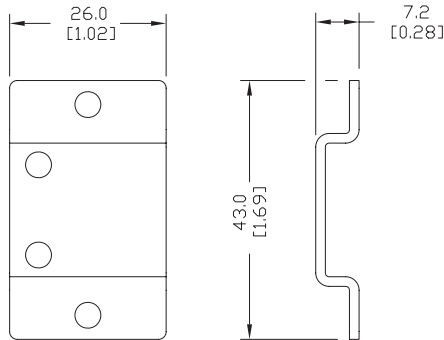


# Pneumatic Directional Control Solenoid Valve Manifolds and Accessories

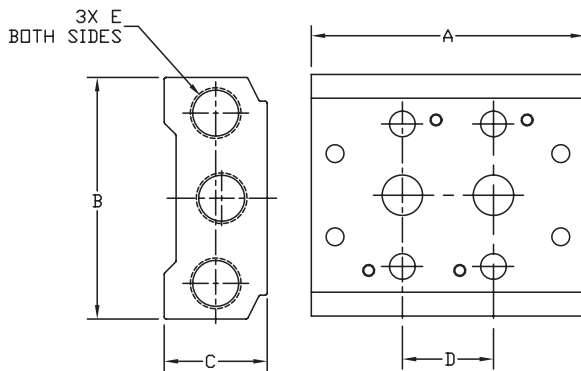
## Dimensions

mm [inches]

### AVP-31BKT



### AM 51 Series Manifolds



MANIFOLD DIMENSIONS					
PART NO.	A	B	C	D	E
AM-512	57.0 [2.24]	58.0 [2.28]	25.0 [0.98]	19.0 [0.75]*	1/4 NPT
AM-514	95.0 [3.74]			3X 19.0 [0.75]*	
AM-516	133.0 [5.24]			5X 19.0 [0.75]*	
AM-518	171.0 [6.73]			7X 19.0 [0.75]*	
AM-522	69.0 [2.72]	61.0 [2.40]	26.0 [1.02]	23.0 [0.91]	3/8 NPT
AM-524	115.0 [4.53]			3X 23.0 [0.91]	
AM-526	161.0 [6.34]			5X 23.0 [0.91]	
AM-528	207.0 [8.15]			7X 23.0 [0.91]	
AM-532	82.0 [3.23]	75.0 [2.95]	30.0 [1.19]	28.0 [1.10]	1/2 NPT
AM-534	138.0 [5.46]			3X 28.0 [1.10]	
AM-536	194.0 [7.64]			5X 28.0 [1.10]	
AM-538	250.0 [9.84]			7X 28.0 [1.10]	
AM-542	98.0 [3.86]	104.0 [4.09]	38.0 [1.50]	35.0 [1.38]	1/2 NPT
AM-544	168.0 [6.61]			3X 35.0 [1.38]	
AM-546	238.0 [9.37]			5X 35.0 [1.38]	
AM-548	308.0 [12.13]			7X 35.0 [1.38]	

\* Exhaust holes have 1mm offset from spacing centerline.

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

# Solenoid Valve Cables and Connectors



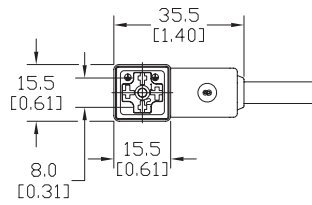
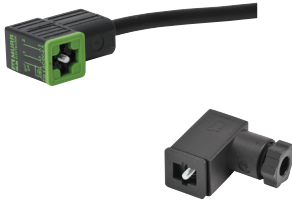
These high quality connectors and over-molded cables help reduce wiring time. The lower voltage models, 24V or 110V AC/DC, include built-in surge suppression, Yellow LED indicator and are rated for connecting with electronics. The 230V AC/DC models are rated for straight wired products. All models are available in five sizes based on DIN 43650.

## Features

- 8mm, 9.4mm, 10mm, 11mm and 18mm square DIN styles
- Fits most popular solenoid valves and sensors
- Suppression and LED indication available in 24V or 110V AC/DC models
- PVC jacketed cables in 1, 3 or 5 meter lengths on select connectors
- Field wireable connectors on select models
- Polarity insensitive (follow solenoid, sensor, or other devices wiring diagram)

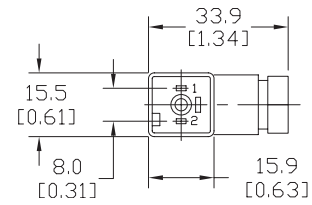
## 8mm Connectors

Dimensions shown  
mm [inches]



Height = 25mm [0.98in]

Connector with Cable



Height = 26mm [1.02]

Field Wireable Connector

### 8mm (3-pole) Connectors (per DIN 43650 Form C)

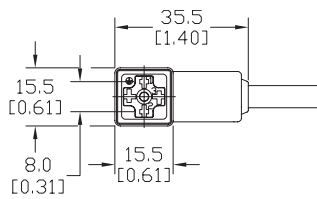
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval		
SC8-LS24-3	\$11.00	24 ±20%	max 4A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2W)	1	m2.5-0.45x25mm/0.4 Nm (3.5 in lb)	0.40	CSA (080128-0-000)		
SC8-LS24-5	\$13.00									0.65				
SC8-LS110-3	\$13.50	110 ±10%							0.41					
SC8-LS110-5	\$16.00								0.63					
SC8-3	\$9.75	230	max 6A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	gland size 0.20 to 0.24	no	none	2		0.39	none		
SC8-0	\$5.00								9	m2.5-0.45x25mm/0.5 Nm (4.4 in lb)	0.10			
SC8-1	\$9.75			67	18 AWG	0.23			2		0.10			
SC8-5	\$12.00										0.68			

Please note: The above parts are not compatible with the AVP and AVS series valves, which have 11mm DIN plugs.

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

## 8mm Transmitter Connector

Dimensions shown  
mm [inches]



Height = 25mm [0.98in]

Connector with Cable

### 8mm (4-pole) Connectors (per DIN 43650 Form C)

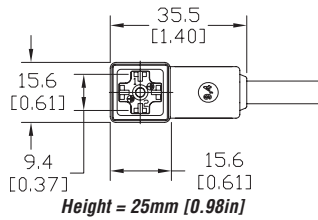
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
SC8-5T	\$17.00	230	max 6A	67	18 AWG	0.26	yes	none	8	m3-0.5x42mm/ 0.5 Nm (4.4 in lb)	0.80	CSA (080128-0-000)

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

# Solenoid Valve Cables and Connectors

## 9.4mm Connectors

Dimensions shown  
mm [inches]



Connector with Cable

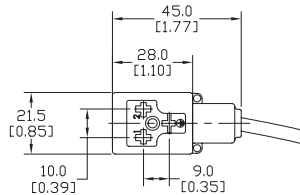
### 9.4mm (3-pole) Connectors (DIN Style, Form C Industrial)

Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/ Torque	Weight (lbs)	Agency Approval
SC9-LS24-3	\$11.00	24 ±20%	max 4A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2W)	1	m3-0.5x26mm/ 0.4 Nm (3.5 in lb)	0.40	CSA (080128-0-000)
SC9-LS24-5	\$13.00										0.64	
SC9-LS110-3	\$13.50	110 ±10%	max 1A					zener diode (D-Z DO-41 ZY200 2W)	7		0.40	
SC9-LS110-5	\$16.00								0.64			
SC9-3	\$9.75	230	max 6A				no	none	2	m3-0.5x26mm/ 0.5 Nm (4.4 in lb)	0.40	none
SC9-5	\$12.00										0.64	

Please note: The above parts are not compatible with the AVP and AVS series valves, which have 11mm DIN plugs.  
Last digit in part number denotes cable length in meters.

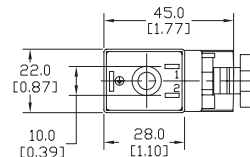
## 10mm Connectors

Dimensions shown  
mm [inches]



Height = 30mm [1.18in]

Connector with Cable



Height = 41mm [1.61in]

Field Wireable Connector

### 10mm (3-pole) Connectors (per DIN 43650 Form B)

Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/ Torque	Weight (lbs)	Agency Approval
SC10-LS24-3	\$11.00	24 ±20%	max 4A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2W)	10	m3-0.5x30mm/ 0.4 Nm (3.5 in lb)	0.43	CSA (080128-0-000)
SC10-LS24-5	\$13.00										0.68	
SC10-LS110-3	\$13.50	110 ±10%	max 1A				zener diode (D-Z DO-41 ZY200 2W)	6	0.43			
SC10-LS110-5	\$16.00								0.68			
SC10-3	\$9.75	230	max 10A				no	none	3	0.43		
SC10-5	\$12.00											
SC10-LS24-0	\$9.50	24 ±20%	max 4A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	gland size 0.24 to 0.32	yes	zener diode (D-Z DO-15 47V 2W)	4	m3-0.5x42mm/ 0.5 Nm (4.4 in lb)	0.07	none
SC10-LS110-0	\$10.00	110 ±10%	max 1A					mov (SIOV S10 K130)	5		0.07	
SC10-0	\$7.50	230	max 10A				no	none	9		0.06	

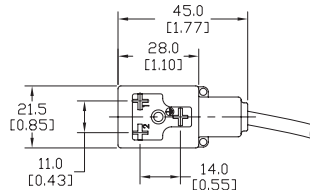
Please note: The above parts are not compatible with the AVP and AVS series valves, which have 11mm DIN plugs.

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

# Solenoid Valve Cables and Connectors

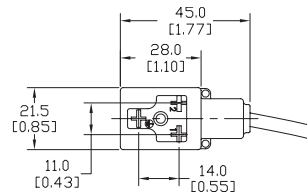
## 11mm Connectors

Dimensions shown  
mm [inches]



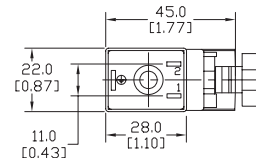
Height = 30mm [1.18in]

Connector with Cable



Height = 30mm [1.18in]

Reverse Connector with Cable



Height = 41mm [1.61in]

Field Wireable Connector

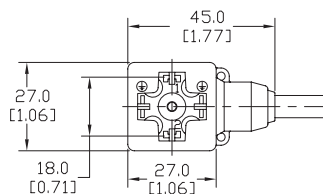
### 11mm (3-pole) Connectors (DIN Style, Form B Industrial)

Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in)	LED	Surge Protection	Wiring Figure	Screw Size/ Torque	Weight (lbs)	Agency Approval				
SC11-LS24-3	\$11.00	24 ±20%	max 4A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2W)	10	m3-0.5x30mm/ 0.4 Nm (3.5 in lb)	0.44	CSA (080128-0-000)				
SC11-LS24-5	\$13.00										0.67					
SC11-LS110-3	\$13.50	110 ±10%	max 1A					zener diode (D-Z DO-41 ZY200 2W)	6		0.44					
SC11-LS110-5	\$16.00										0.67					
SC11-LS24-3R	\$11.00	24 ±20%	max 4A					zener diode (D-Z DO-15 47V 2W)	10		0.44					
SC11-LS24-5R	\$13.00										0.67					
SC11-LS110-3R	\$13.50	110 ±10%	max 1A					zener diode (D-Z DO-41 ZY200 2W)	6		0.44					
SC11-LS110-5R	\$16.00								0.67							
SC11-3	\$9.75	230	max 10A				65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	gland size 0.24 to 0.32		no		none	3	0.44	none
SC11-5	\$12.00													0.67		
SC11-LS24-0	\$9.50	24 ±20%	max 4A	yes	zener diode (D-Z DO-15 47V 2W)	4				m3-0.5x42mm/ 0.5 Nm (4.4 in lb)	0.07					
SC11-LS110-0	\$10.00	110 ±10%	max 1A		mov (SIOV S10 K130)	5	0.07									
SC11-0	\$7.50	230	max 10A		no	none	9	0.07								

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

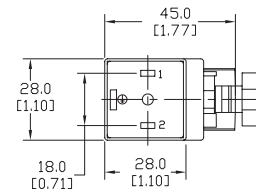
## 18mm Connectors

Dimensions shown  
mm [inches]



Height = 30mm [1.18in]

Connector with Cable



Height = 41mm [1.61in]

Field Wireable Connector

### 18mm (3-pole) Connectors (per DIN 43650 Form A)

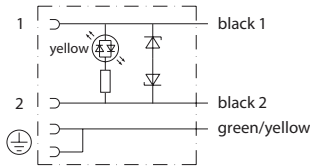
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in)	LED	Surge Protection	Wiring Figure	Screw Size/ Torque	Weight (lbs)	Agency Approval
SC18-LS24-3	\$11.00	24 ±20%	max 4A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2W)	7	m3-0.5x30mm/ 0.4 Nm (3.5 in lb)	0.44	CSA (080128-0-000)
SC18-LS24-5	\$13.00										0.69	
SC18-LS110-3	\$13.50	110 ±10%	max 1A					zener diode (D-Z DO-41 ZY200 2W)			0.44	
SC18-LS110-5	\$16.00							0.69				
SC18-3	\$9.75	230	max 10A				no	none	2		0.44	
SC18-5	\$12.00											
SC18-LS24-0	\$9.50	24 ±20%	max 4A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	gland size 0.24 to 0.32				yes	zener diode (D-Z DO-15 47V 2W)	4
SC18-LS110-0	\$10.00	110 ±10%	max 1A					mov (SIOV S10 K130)	5		0.07	
SC18-0	\$7.50	230	max 10A				no	none	9			0.07

Please note: The above parts are not compatible with the AVP and AVS series valves, which have 11mm DIN plugs.

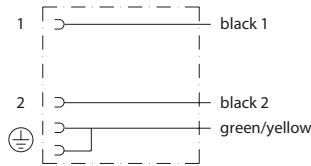
Last digit in part number denotes cable length in meters, a 0 indicates field termination.



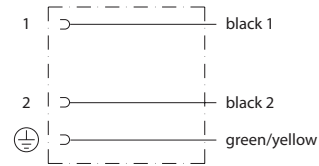
# Solenoid Valve Cables and Connectors Wiring Diagrams



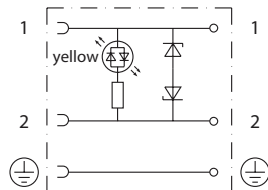
**Figure No. 1**



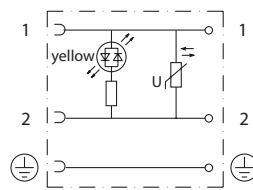
**Figure No. 2**



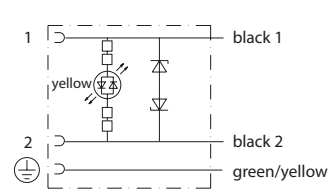
**Figure No. 3**



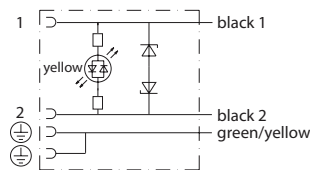
**Figure No. 4**



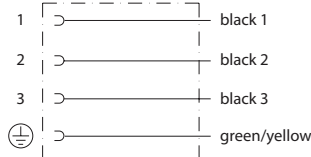
**Figure No. 5**



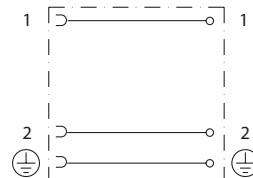
**Figure No. 6**



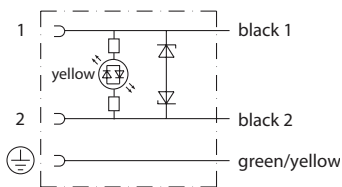
**Figure No. 7**



**Figure No. 8**



**Figure No. 9**



**Figure No. 10**